ENSIGN Directional

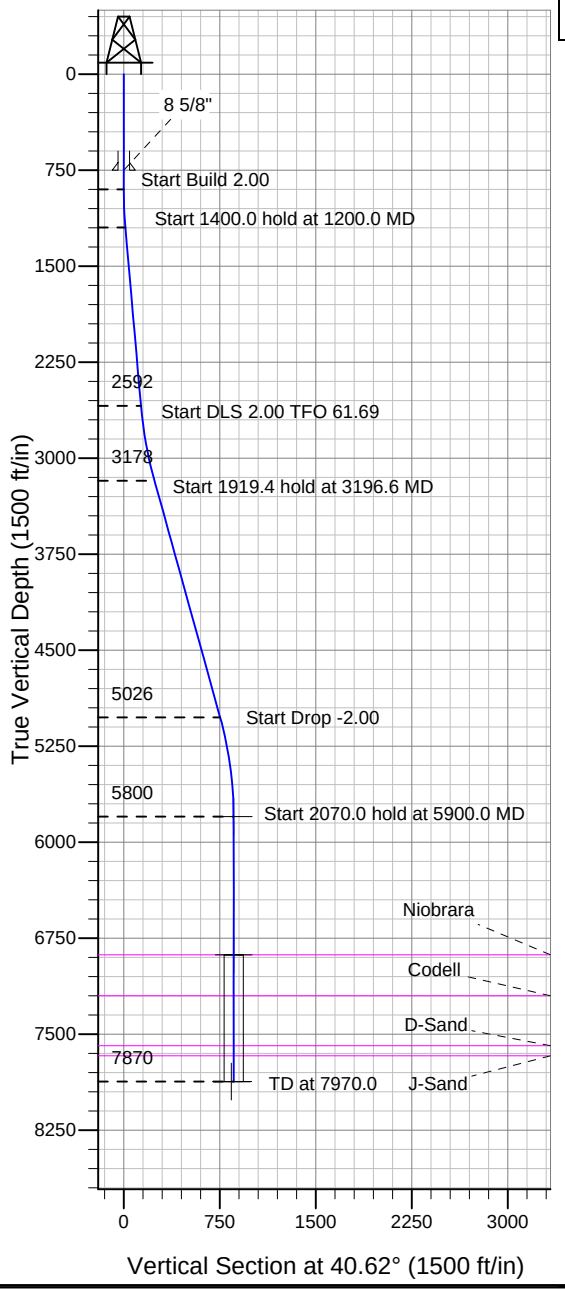
Well Name: **Powers X22-21D**

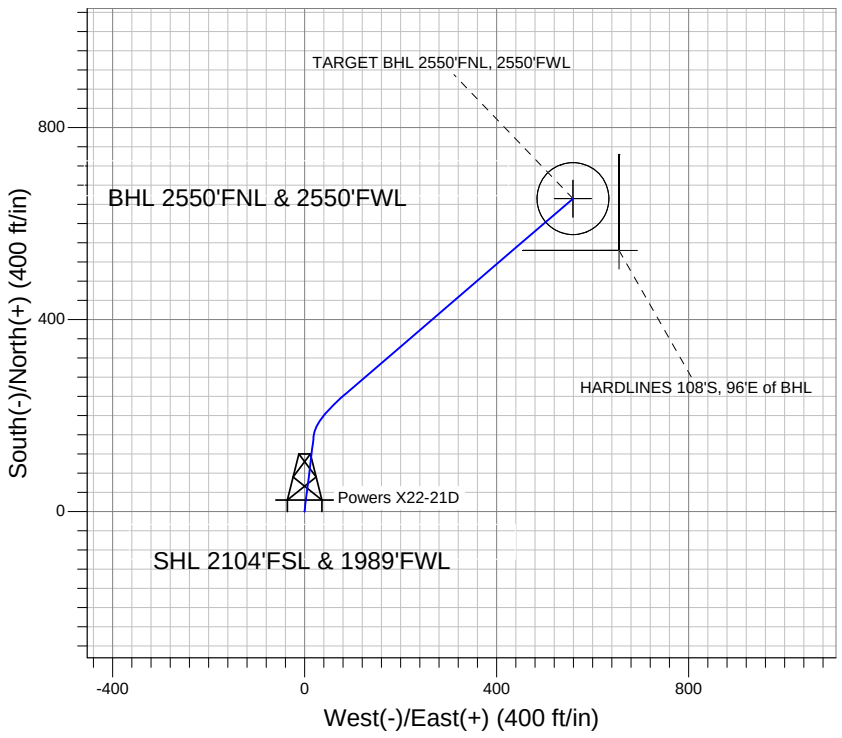
Surface Location: Powers X22-21D Pad Sec.22-T2N-R65W
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4887.0

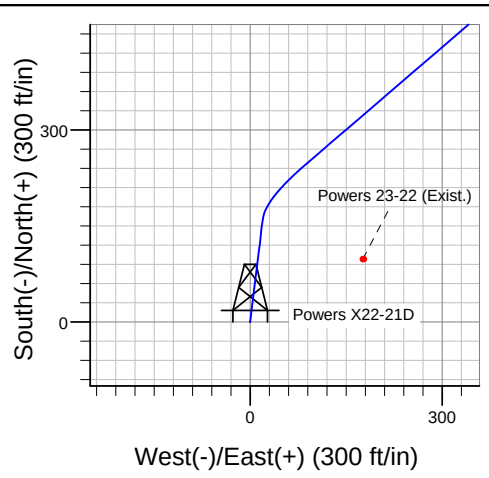
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1288639.89	3237024.89	40° 7' 21.360 N	104° 39' 8.676 W	

Original Well EleWELL @ 4900.0ft (Original Well Elev)

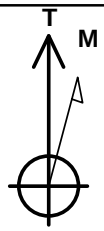
NOBLE ENERGY INC WELD COUNTY CO







Powers X22-21D Pad Sec.22-T2N-R65W
Powers X22-21D
Noble Powers X22-21D Plan #1 (9-28-10)
13:51, October 08 2010



Azimuths to True North
Magnetic North: 8.87°

Magnetic Field
Strength: 53070.0snT
Dip Angle: 66.87°
Date: 10/6/2010
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2550'FNL, 2550'FWL	5800.0	652.1	559.3	40° 7' 27.804 N	104° 39' 1.476 W	Point
TARGET CIRCLE 2550'FNL, 2550'FWL	6880.0	652.1	559.3	40° 7' 27.804 N	104° 39' 1.476 W	Circle (Radius: 75.0)
HARDLINES 108'S, 96'E of BHL	7870.0	544.1	655.3	40° 7' 26.737 N	104° 39' 0.240 W	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	1200.0	6.00	7.00	1199.5	15.6	1.9	2.00	7.00	13.1	
4	2600.0	6.00	7.00	2591.8	160.8	19.7	0.00	0.00	134.9	
5	3196.6	15.68	49.34	3177.8	244.6	84.9	2.00	61.69	241.0	
6	5116.0	15.68	49.34	5025.7	582.6	478.4	0.00	0.00	753.7	
7	5900.0	0.00	0.00	5800.0	652.1	559.3	2.00	180.00	859.1	TARGET BHL 2550'FNL, 2550'FWL
8	7970.0	0.00	0.00	7870.0	652.1	559.3	0.00	0.00	859.1	

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.22-T2N-R65W
Powers X22-21D Pad Sec.22-T2N-R65W
Powers X22-21D

Wellbore #1

Plan: Noble Powers X22-21D Plan #1 (9-28-10)

Standard Planning Report

08 October, 2010

noble energy

Database:	Landmark	**Local Co-ordinate Reference:**	Well Powers X22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Project:	SEC.22-T2N-R65W	**MD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	**North Reference:**	True
Well:	Powers X22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Powers X22-21D Plan #1 (9-28-10)		

Project SEC.22-T2N-R65W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Powers X22-21D Pad Sec.22-T2N-R65W

Site Position:		**Northing:**	1,288,639.91 ft	**Latitude:**	40° 7' 21.360 N
From:	Lat/Long	**Easting:**	3,237,024.89 ft	**Longitude:**	104° 39' 8.676 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.55 °

Well Powers X22-21D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,288,639.89 ft	**Latitude:**	40° 7' 21.360 N
	+E/-W	0.0 ft	**Easting:**	3,237,024.89 ft	**Longitude:**	104° 39' 8.676 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,887.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/6/2010	8.87	66.87	53,070

Design Noble Powers X22-21D Plan #1 (9-28-10)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	40.62

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	6.00	7.00	1,199.5	15.6	1.9	2.00	2.00	0.00	7.00	
2,600.0	6.00	7.00	2,591.8	160.8	19.7	0.00	0.00	0.00	0.00	
3,196.6	15.68	49.34	3,177.8	244.6	84.9	2.00	1.62	7.10	61.69	
5,116.0	15.68	49.34	5,025.7	582.6	478.4	0.00	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,800.0	652.1	559.3	2.00	-2.00	0.00	180.00	TARGET BHL 255(
7,970.0	0.00	0.00	7,870.0	652.1	559.3	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Powers X22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Project:	SEC.22-T2N-R65W	**MD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	**North Reference:**	True
Well:	Powers X22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Powers X22-21D Plan #1 (9-28-10)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.40	7.00	920.0	0.1	0.0	0.1	2.00	2.00	0.00
960.0	1.20	7.00	960.0	0.6	0.1	0.5	2.00	2.00	0.00
1,000.0	2.00	7.00	1,000.0	1.7	0.2	1.5	2.00	2.00	0.00
1,040.0	2.80	7.00	1,039.9	3.4	0.4	2.8	2.00	2.00	0.00
1,080.0	3.60	7.00	1,079.9	5.6	0.7	4.7	2.00	2.00	0.00
1,120.0	4.40	7.00	1,119.8	8.4	1.0	7.0	2.00	2.00	0.00
1,160.0	5.20	7.00	1,159.6	11.7	1.4	9.8	2.00	2.00	0.00
1,200.0	6.00	7.00	1,199.5	15.6	1.9	13.1	2.00	2.00	0.00
1,240.0	6.00	7.00	1,239.2	19.7	2.4	16.6	0.00	0.00	0.00
1,280.0	6.00	7.00	1,279.0	23.9	2.9	20.0	0.00	0.00	0.00
1,320.0	6.00	7.00	1,318.8	28.0	3.4	23.5	0.00	0.00	0.00
1,360.0	6.00	7.00	1,358.6	32.2	4.0	27.0	0.00	0.00	0.00
1,400.0	6.00	7.00	1,398.4	36.3	4.5	30.5	0.00	0.00	0.00
1,440.0	6.00	7.00	1,438.1	40.5	5.0	34.0	0.00	0.00	0.00
1,480.0	6.00	7.00	1,477.9	44.6	5.5	37.4	0.00	0.00	0.00
1,520.0	6.00	7.00	1,517.7	48.8	6.0	40.9	0.00	0.00	0.00
1,560.0	6.00	7.00	1,557.5	52.9	6.5	44.4	0.00	0.00	0.00
1,600.0	6.00	7.00	1,597.3	57.1	7.0	47.9	0.00	0.00	0.00
1,640.0	6.00	7.00	1,637.0	61.2	7.5	51.4	0.00	0.00	0.00
1,680.0	6.00	7.00	1,676.8	65.4	8.0	54.8	0.00	0.00	0.00
1,720.0	6.00	7.00	1,716.6	69.5	8.5	58.3	0.00	0.00	0.00
1,760.0	6.00	7.00	1,756.4	73.7	9.0	61.8	0.00	0.00	0.00
1,800.0	6.00	7.00	1,796.2	77.8	9.6	65.3	0.00	0.00	0.00
1,840.0	6.00	7.00	1,835.9	82.0	10.1	68.8	0.00	0.00	0.00
1,880.0	6.00	7.00	1,875.7	86.1	10.6	72.3	0.00	0.00	0.00
1,920.0	6.00	7.00	1,915.5	90.3	11.1	75.7	0.00	0.00	0.00
1,960.0	6.00	7.00	1,955.3	94.4	11.6	79.2	0.00	0.00	0.00
2,000.0	6.00	7.00	1,995.1	98.6	12.1	82.7	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Powers X22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Project:	SEC.22-T2N-R65W	**MD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	**North Reference:**	True
Well:	Powers X22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Powers X22-21D Plan #1 (9-28-10)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,040.0	6.00	7.00	2,034.9	102.7	12.6	86.2	0.00	0.00	0.00
2,080.0	6.00	7.00	2,074.6	106.9	13.1	89.7	0.00	0.00	0.00
2,120.0	6.00	7.00	2,114.4	111.0	13.6	93.1	0.00	0.00	0.00
2,160.0	6.00	7.00	2,154.2	115.2	14.1	96.6	0.00	0.00	0.00
2,200.0	6.00	7.00	2,194.0	119.3	14.7	100.1	0.00	0.00	0.00
2,240.0	6.00	7.00	2,233.8	123.5	15.2	103.6	0.00	0.00	0.00
2,280.0	6.00	7.00	2,273.5	127.6	15.7	107.1	0.00	0.00	0.00
2,320.0	6.00	7.00	2,313.3	131.8	16.2	110.6	0.00	0.00	0.00
2,360.0	6.00	7.00	2,353.1	135.9	16.7	114.0	0.00	0.00	0.00
2,400.0	6.00	7.00	2,392.9	140.1	17.2	117.5	0.00	0.00	0.00
2,440.0	6.00	7.00	2,432.7	144.2	17.7	121.0	0.00	0.00	0.00
2,480.0	6.00	7.00	2,472.4	148.4	18.2	124.5	0.00	0.00	0.00
2,520.0	6.00	7.00	2,512.2	152.5	18.7	128.0	0.00	0.00	0.00
2,560.0	6.00	7.00	2,552.0	156.7	19.2	131.4	0.00	0.00	0.00
2,600.0	6.00	7.00	2,591.8	160.8	19.7	134.9	0.00	0.00	0.00
2,640.0	6.42	13.31	2,631.5	165.1	20.5	138.7	2.00	1.05	15.78
2,680.0	6.90	18.80	2,671.3	169.5	21.8	142.9	2.00	1.21	13.72
2,720.0	7.44	23.53	2,711.0	174.2	23.6	147.6	2.00	1.35	11.83
2,760.0	8.03	27.61	2,750.6	179.0	25.9	152.8	2.00	1.46	10.18
2,800.0	8.64	31.12	2,790.2	184.1	28.8	158.5	2.00	1.54	8.78
2,840.0	9.29	34.15	2,829.7	189.3	32.2	164.6	2.00	1.61	7.59
2,880.0	9.96	36.79	2,869.1	194.8	36.0	171.3	2.00	1.67	6.60
2,920.0	10.64	39.10	2,908.5	200.4	40.4	178.4	2.00	1.71	5.77
2,960.0	11.34	41.13	2,947.7	206.2	45.4	186.1	2.00	1.75	5.07
3,000.0	12.06	42.92	2,986.9	212.3	50.8	194.2	2.00	1.78	4.48
3,040.0	12.78	44.51	3,026.0	218.5	56.7	202.8	2.00	1.81	3.98
3,080.0	13.51	45.94	3,064.9	224.9	63.2	211.8	2.00	1.83	3.56
3,120.0	14.25	47.22	3,103.8	231.5	70.2	221.4	2.00	1.85	3.20
3,160.0	14.99	48.37	3,142.5	238.2	77.6	231.4	2.00	1.86	2.89
3,196.6	15.68	49.34	3,177.8	244.6	84.9	241.0	2.00	1.87	2.63
3,200.0	15.68	49.34	3,181.0	245.2	85.6	241.9	0.00	0.00	0.00
3,240.0	15.68	49.34	3,219.6	252.3	93.8	252.6	0.00	0.00	0.00
3,280.0	15.68	49.34	3,258.1	259.3	102.0	263.2	0.00	0.00	0.00
3,320.0	15.68	49.34	3,296.6	266.3	110.2	273.9	0.00	0.00	0.00
3,360.0	15.68	49.34	3,335.1	273.4	118.4	284.6	0.00	0.00	0.00
3,400.0	15.68	49.34	3,373.6	280.4	126.6	295.3	0.00	0.00	0.00
3,440.0	15.68	49.34	3,412.1	287.5	134.8	306.0	0.00	0.00	0.00
3,480.0	15.68	49.34	3,450.6	294.5	143.0	316.7	0.00	0.00	0.00
3,520.0	15.68	49.34	3,489.1	301.6	151.2	327.4	0.00	0.00	0.00
3,560.0	15.68	49.34	3,527.6	308.6	159.4	338.0	0.00	0.00	0.00
3,600.0	15.68	49.34	3,566.2	315.7	167.6	348.7	0.00	0.00	0.00
3,640.0	15.68	49.34	3,604.7	322.7	175.8	359.4	0.00	0.00	0.00
3,680.0	15.68	49.34	3,643.2	329.7	184.0	370.1	0.00	0.00	0.00
3,720.0	15.68	49.34	3,681.7	336.8	192.2	380.8	0.00	0.00	0.00
3,760.0	15.68	49.34	3,720.2	343.8	200.4	391.5	0.00	0.00	0.00
3,800.0	15.68	49.34	3,758.7	350.9	208.6	402.2	0.00	0.00	0.00
3,840.0	15.68	49.34	3,797.2	357.9	216.8	412.9	0.00	0.00	0.00
3,880.0	15.68	49.34	3,835.7	365.0	225.0	423.5	0.00	0.00	0.00
3,920.0	15.68	49.34	3,874.2	372.0	233.2	434.2	0.00	0.00	0.00
3,960.0	15.68	49.34	3,912.8	379.1	241.4	444.9	0.00	0.00	0.00
4,000.0	15.68	49.34	3,951.3	386.1	249.6	455.6	0.00	0.00	0.00
4,040.0	15.68	49.34	3,989.8	393.1	257.8	466.3	0.00	0.00	0.00
4,080.0	15.68	49.34	4,028.3	400.2	266.0	477.0	0.00	0.00	0.00
4,120.0	15.68	49.34	4,066.8	407.2	274.2	487.7	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Powers X22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Project:	SEC.22-T2N-R65W	**MD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	**North Reference:**	True
Well:	Powers X22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Powers X22-21D Plan #1 (9-28-10)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,160.0	15.68	49.34	4,105.3	414.3	282.4	498.3	0.00	0.00	0.00
4,200.0	15.68	49.34	4,143.8	421.3	290.6	509.0	0.00	0.00	0.00
4,240.0	15.68	49.34	4,182.3	428.4	298.8	519.7	0.00	0.00	0.00
4,280.0	15.68	49.34	4,220.8	435.4	307.0	530.4	0.00	0.00	0.00
4,320.0	15.68	49.34	4,259.4	442.5	315.2	541.1	0.00	0.00	0.00
4,360.0	15.68	49.34	4,297.9	449.5	323.4	551.8	0.00	0.00	0.00
4,400.0	15.68	49.34	4,336.4	456.5	331.6	562.5	0.00	0.00	0.00
4,440.0	15.68	49.34	4,374.9	463.6	339.9	573.1	0.00	0.00	0.00
4,480.0	15.68	49.34	4,413.4	470.6	348.1	583.8	0.00	0.00	0.00
4,520.0	15.68	49.34	4,451.9	477.7	356.3	594.5	0.00	0.00	0.00
4,560.0	15.68	49.34	4,490.4	484.7	364.5	605.2	0.00	0.00	0.00
4,600.0	15.68	49.34	4,528.9	491.8	372.7	615.9	0.00	0.00	0.00
4,640.0	15.68	49.34	4,567.5	498.8	380.9	626.6	0.00	0.00	0.00
4,680.0	15.68	49.34	4,606.0	505.9	389.1	637.3	0.00	0.00	0.00
4,720.0	15.68	49.34	4,644.5	512.9	397.3	647.9	0.00	0.00	0.00
4,760.0	15.68	49.34	4,683.0	519.9	405.5	658.6	0.00	0.00	0.00
4,800.0	15.68	49.34	4,721.5	527.0	413.7	669.3	0.00	0.00	0.00
4,840.0	15.68	49.34	4,760.0	534.0	421.9	680.0	0.00	0.00	0.00
4,880.0	15.68	49.34	4,798.5	541.1	430.1	690.7	0.00	0.00	0.00
4,920.0	15.68	49.34	4,837.0	548.1	438.3	701.4	0.00	0.00	0.00
4,960.0	15.68	49.34	4,875.5	555.2	446.5	712.1	0.00	0.00	0.00
5,000.0	15.68	49.34	4,914.1	562.2	454.7	722.7	0.00	0.00	0.00
5,040.0	15.68	49.34	4,952.6	569.3	462.9	733.4	0.00	0.00	0.00
5,080.0	15.68	49.34	4,991.1	576.3	471.1	744.1	0.00	0.00	0.00
5,116.0	15.68	49.34	5,025.7	582.6	478.4	753.7	0.00	0.00	0.00
5,120.0	15.60	49.34	5,029.6	583.3	479.3	754.8	2.00	-2.00	0.00
5,160.0	14.80	49.34	5,068.2	590.2	487.2	765.2	2.00	-2.00	0.00
5,200.0	14.00	49.34	5,106.9	596.7	494.8	775.0	2.00	-2.00	0.00
5,240.0	13.20	49.34	5,145.8	602.8	501.9	784.3	2.00	-2.00	0.00
5,280.0	12.40	49.34	5,184.8	608.6	508.6	793.1	2.00	-2.00	0.00
5,320.0	11.60	49.34	5,223.9	614.0	514.9	801.3	2.00	-2.00	0.00
5,360.0	10.80	49.34	5,263.2	619.0	520.8	809.0	2.00	-2.00	0.00
5,400.0	10.00	49.34	5,302.5	623.7	526.3	816.1	2.00	-2.00	0.00
5,440.0	9.20	49.34	5,342.0	628.1	531.4	822.7	2.00	-2.00	0.00
5,480.0	8.40	49.34	5,381.5	632.1	536.0	828.7	2.00	-2.00	0.00
5,520.0	7.60	49.34	5,421.1	635.7	540.2	834.2	2.00	-2.00	0.00
5,560.0	6.80	49.34	5,460.8	639.0	544.0	839.2	2.00	-2.00	0.00
5,600.0	6.00	49.34	5,500.5	641.9	547.4	843.6	2.00	-2.00	0.00
5,640.0	5.20	49.34	5,540.3	644.4	550.4	847.5	2.00	-2.00	0.00
5,680.0	4.40	49.34	5,580.2	646.6	552.9	850.8	2.00	-2.00	0.00
5,720.0	3.60	49.34	5,620.1	648.4	555.0	853.5	2.00	-2.00	0.00
5,760.0	2.80	49.34	5,660.0	649.9	556.7	855.7	2.00	-2.00	0.00
5,800.0	2.00	49.34	5,700.0	651.0	558.0	857.4	2.00	-2.00	0.00
5,840.0	1.20	49.34	5,740.0	651.7	558.8	858.5	2.00	-2.00	0.00
5,880.0	0.40	49.34	5,780.0	652.1	559.3	859.0	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,800.0	652.1	559.3	859.1	2.00	-2.00	0.00
TARGET BHL 2550'FNL, 2550'FWL									
5,920.0	0.00	0.00	5,820.0	652.1	559.3	859.1	0.00	0.00	0.00
5,960.0	0.00	0.00	5,860.0	652.1	559.3	859.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,900.0	652.1	559.3	859.1	0.00	0.00	0.00
6,040.0	0.00	0.00	5,940.0	652.1	559.3	859.1	0.00	0.00	0.00
6,080.0	0.00	0.00	5,980.0	652.1	559.3	859.1	0.00	0.00	0.00
6,120.0	0.00	0.00	6,020.0	652.1	559.3	859.1	0.00	0.00	0.00
6,160.0	0.00	0.00	6,060.0	652.1	559.3	859.1	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Powers X22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Project:	SEC.22-T2N-R65W	**MD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	**North Reference:**	True
Well:	Powers X22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Powers X22-21D Plan #1 (9-28-10)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,200.0	0.00	0.00	6,100.0	652.1	559.3	859.1	0.00	0.00	0.00
6,240.0	0.00	0.00	6,140.0	652.1	559.3	859.1	0.00	0.00	0.00
6,280.0	0.00	0.00	6,180.0	652.1	559.3	859.1	0.00	0.00	0.00
6,320.0	0.00	0.00	6,220.0	652.1	559.3	859.1	0.00	0.00	0.00
6,360.0	0.00	0.00	6,260.0	652.1	559.3	859.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,300.0	652.1	559.3	859.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,340.0	652.1	559.3	859.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,380.0	652.1	559.3	859.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,420.0	652.1	559.3	859.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,460.0	652.1	559.3	859.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,500.0	652.1	559.3	859.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,540.0	652.1	559.3	859.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,580.0	652.1	559.3	859.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,620.0	652.1	559.3	859.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,660.0	652.1	559.3	859.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,700.0	652.1	559.3	859.1	0.00	0.00	0.00
6,840.0	0.00	0.00	6,740.0	652.1	559.3	859.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,780.0	652.1	559.3	859.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,820.0	652.1	559.3	859.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,860.0	652.1	559.3	859.1	0.00	0.00	0.00
6,980.0	0.00	0.00	6,880.0	652.1	559.3	859.1	0.00	0.00	0.00
Niobrara - TARGET CIRCLE 2550'FNL, 2550'FWL									
7,000.0	0.00	0.00	6,900.0	652.1	559.3	859.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,940.0	652.1	559.3	859.1	0.00	0.00	0.00
7,080.0	0.00	0.00	6,980.0	652.1	559.3	859.1	0.00	0.00	0.00
7,120.0	0.00	0.00	7,020.0	652.1	559.3	859.1	0.00	0.00	0.00
7,160.0	0.00	0.00	7,060.0	652.1	559.3	859.1	0.00	0.00	0.00
7,200.0	0.00	0.00	7,100.0	652.1	559.3	859.1	0.00	0.00	0.00
7,240.0	0.00	0.00	7,140.0	652.1	559.3	859.1	0.00	0.00	0.00
7,280.0	0.00	0.00	7,180.0	652.1	559.3	859.1	0.00	0.00	0.00
7,300.0	0.00	0.00	7,200.0	652.1	559.3	859.1	0.00	0.00	0.00
Codell									
7,320.0	0.00	0.00	7,220.0	652.1	559.3	859.1	0.00	0.00	0.00
7,360.0	0.00	0.00	7,260.0	652.1	559.3	859.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,300.0	652.1	559.3	859.1	0.00	0.00	0.00
7,440.0	0.00	0.00	7,340.0	652.1	559.3	859.1	0.00	0.00	0.00
7,480.0	0.00	0.00	7,380.0	652.1	559.3	859.1	0.00	0.00	0.00
7,520.0	0.00	0.00	7,420.0	652.1	559.3	859.1	0.00	0.00	0.00
7,560.0	0.00	0.00	7,460.0	652.1	559.3	859.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,500.0	652.1	559.3	859.1	0.00	0.00	0.00
7,640.0	0.00	0.00	7,540.0	652.1	559.3	859.1	0.00	0.00	0.00
7,680.0	0.00	0.00	7,580.0	652.1	559.3	859.1	0.00	0.00	0.00
7,690.0	0.00	0.00	7,590.0	652.1	559.3	859.1	0.00	0.00	0.00
D-Sand									
7,720.0	0.00	0.00	7,620.0	652.1	559.3	859.1	0.00	0.00	0.00
7,760.0	0.00	0.00	7,660.0	652.1	559.3	859.1	0.00	0.00	0.00
7,770.0	0.00	0.00	7,670.0	652.1	559.3	859.1	0.00	0.00	0.00
J-Sand									
7,800.0	0.00	0.00	7,700.0	652.1	559.3	859.1	0.00	0.00	0.00
7,840.0	0.00	0.00	7,740.0	652.1	559.3	859.1	0.00	0.00	0.00
7,880.0	0.00	0.00	7,780.0	652.1	559.3	859.1	0.00	0.00	0.00
7,920.0	0.00	0.00	7,820.0	652.1	559.3	859.1	0.00	0.00	0.00
7,960.0	0.00	0.00	7,860.0	652.1	559.3	859.1	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Powers X22-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Project:	SEC.22-T2N-R65W	**MD Reference:**	WELL @ 4900.0ft (Original Well Elev)
Site:	Powers X22-21D Pad Sec.22-T2N-R65W	**North Reference:**	True
Well:	Powers X22-21D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Powers X22-21D Plan #1 (9-28-10)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,970.0	0.00	0.00	7,870.0	652.1	559.3	859.1	0.00	0.00	0.00
HARDLINES 108'S, 96'E of BHL									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET CIRCLE 25	0.00	0.00	6,880.0	652.1	559.3	1,289,297.29	3,237,577.92	40° 7' 27.804 N	104° 39' 1.476 W
- plan hits target									
- Circle (radius 75.0)									
HARDLINES 108'S, 9	0.00	0.00	7,870.0	544.1	655.3	1,289,190.21	3,237,674.93	40° 7' 26.737 N	104° 39' 0.240 W
- plan misses by 144.5ft at 7970.0ft MD (7870.0 TVD, 652.1 N, 559.3 E)									
- Polygon									
Point 1			7,870.0	0.0	0.0	1,289,190.21	3,237,674.93		
Point 2			7,870.0	200.0	0.0	1,289,390.19	3,237,673.02		
Point 3			7,870.0	0.0	0.0	1,289,190.21	3,237,674.93		
Point 4			7,870.0	0.0	-200.0	1,289,188.30	3,237,474.95		
TARGET BHL 2550'F	0.00	0.00	5,800.0	652.1	559.3	1,289,297.29	3,237,577.92	40° 7' 27.804 N	104° 39' 1.476 W
- plan hits target									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
750.0	750.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,980.0	6,880.0	Niobrara		0.00	
7,300.0	7,200.0	Codell		0.00	
7,690.0	7,590.0	D-Sand		0.00	
7,770.0	7,670.0	J-Sand		0.00	